

## 人形机器人月报： 智元机器人千台人形机器人量产， 人形机器人产业化进程有望加速

Baiqiao Xu  
bq.xu@htisec.com

Yuewei Zhao  
yw.zhao@htisec.com

Weimin Yu  
wm.yu@htisec.com

Haofei Chen  
haofei.chen@htisec.com

### 投资要点：

#### ➤ 政策支持

- **杭州市人民政府办公厅印发《杭州市促进人形机器人产业创新发展的若干政策措施》**。根据杭州市人民政府官网，2024年12月，为贯彻落实杭州市委、市政府关于打造人形机器人产业集群的规划部署，培育新质生产力，赋能机器人产业高质量发展，根据《工业和信息化部关于印发〈人形机器人创新发展指导意见〉的通知》、《浙江省制造业高质量发展领导小组办公室关于印发〈浙江省人形机器人产业创新发展实施方案（2024—2027年）〉的通知》，杭州市人民政府办公厅制定《杭州市促进人形机器人产业创新发展的若干政策措施》，自2025年1月22日起施行，有效期至2027年12月31日。

该政策措施提出：将人形机器人整机、软件算法及关键零部件列入杭州市重点科研项目支持范围，梳理形成攻关清单，推动人形机器人“大脑、小脑、肢体”等关键技术攻关；支持打造人形机器人产业链，鼓励融链集聚发展；积极发展人形机器人产业后市场服务，围绕工业制造、市政巡检、医疗康养、文旅服务、应急作业、安保巡逻、城市管理、教育科研、生活服务等领域，全力打造一批优质应用场景并发布推广等。

#### ➤ 整机动态

- **逐际动力全尺寸人形机器人整机工程化稳步提升**。根据机器人前瞻微信公众号，逐际动力全尺寸人形机器人最新测试展现了整机工程化升级，实现全身多关节协同大范围运动，能够完成一系列稳定、高动态的全身复杂动作。在整机的工程化升级方面，采用中空关节设计，从而实现动力缆线和通信线缆排布优化，大幅提升机器人的稳定性并赋予机器人更大的关节活动范围。高力矩密度关节能够输出强大扭矩并实现高性能关节控制，全面提升运动控制算法的控制效果，让机器人以流畅、稳定的姿态完成复杂的全身运动。
- **智元机器人第1000台通用具身机器人正式下线**。根据智元机器人和科创板日报微信公众号，2025年1月6日，智元机器人量产的第1000台通用具身机器人正式下线，其中双足人形机器人远征A2/灵犀X1为731套，轮式通用机器人远征A2/A2-W为269套。
- **广汽发布第三代具身智能人形机器人 GoMate**。根据广汽集团微信公众号，12月26日，2024年中国机器人网年会在上海举行。在新品发布环节，广汽集团隆重推出了自主研发的第三代具身智能人形机器人 GoMate。GoMate是一款全尺寸的轮足人形机器人，全身拥有38个自由度。机器人创新性地采用了行业首创的可变轮足移动结构，巧妙地融合了四轮足、两轮足两种模式。四轮足稳定状态下高度约1.4米，两轮足站姿高度可达1.75米。四轮足模式下，机器人可稳健上下楼梯、爬坡、单边越障；两轮足模式下，机器人动作灵活高效，空间占用更小。
- **UniX AI发布第二代通用人形机器人，华硕预计在2025年推出人形机器人**。根据高工人形机器人微信公众号，2024年12月22日，UniX AI宣布，其全新通用人形机器人 Wanda 2.0 正式亮相，并同步开启全球预售。从 UniX AI 公布的视频来看，Wanda 2.0 在外观上与一代相比，主要是双臂形态改变。Wanda 一代采用的是可变换操作模式的三指夹爪。2.0 版本采用自适应智能夹爪，搭载世界首个量产级八自由度仿生手臂。华硕计划于2025年推出人形机器人。

本研究报告由海通国际分销，海通国际是由海通国际研究有限公司，海通证券印度私人有限公司，海通国际株式会社和海通国际证券集团其他各成员单位的证券研究团队所组成的全球品牌，海通国际证券集团各成员分别在其许可的司法管辖区内从事证券活动。关于海通国际的分析师证明、重要披露声明和免责声明，请参阅附录。(Please see appendix for English translation of the disclaimer)

➤ **核心零部件动态**

- **雷赛智能发布第二代超高密度 FM2 系列无框电机，加速人形机器人产业的商业化应用。**根据雷赛智能微信公众号，针对人形机器人厂家在商业化应用无框力矩电机时面临的三大痛点（连续工作的温度高，可靠性差；爆发力不足，剧烈动作容易烧电机；一致性差，调试时间长），雷赛智能最新研发的第二代 FM2 系列无框电机，采用新一代磁路优化和灌封工艺技术、实现“一低一高一长”（超低温升+超高密度+超长续航）三大优势，加速人形机器人产业的商业化应用。
- **曼恩斯特子公司与宇树科技签署战略合作协议。**根据曼恩斯特微信公众号，2024 年 12 月 20 日，深圳市曼恩斯特科技股份有限公司子公司深圳市蓝方技术有限公司与杭州宇树科技有限公司在杭州举行了战略合作签约仪式。根据协议内容，双方将秉承互惠互利、诚实合作、共同发展的原则，在战略、研发、业务、渠道等方面建立战略合作，围绕机器人本体软硬件技术、机器人产业落地等领域开展合作。

➤ **投融资动态**

- **魔法原子获得 1.5 亿元天使轮融资。**根据机器人前瞻微信公众号，2024 年 12 月，具身智能机器人公司魔法原子（MagicLab）完成了 1.5 亿元天使轮融资，本轮融资由追创投领投，翼朴基金跟投。魔法原子于 2024 年 1 月在北京成立，随后成为全球首家以“电驱机器人”打破波士顿动力空翻专利的机器人公司，在 2024 年年底完成了自研人形机器人 2 到 3 个版本的迭代，及其在多个工业、商业场景的实训。在本轮融资之后，魔法原子计划扩大人才招聘，持续加码具身智能核心技术研发、人形机器人整机研发，并加快量产步伐、拓展工业及商业场景落地与商业化。
- **小雨智造完成亿元 A 轮融资。**根据高工人形机器人微信公众号，小米投资的首家大模型机器人公司——北京小雨智造科技有限公司（以下简称“小雨智造”）完成亿元 A 轮融资。本轮融资由北京信息产业发展投资基金独家投资，这是继天使轮获得小米集团、王田苗教授、北京智源研究院等亿元投资后，小雨智造再次获得亿元级别的融资。

➤ **投资建议。**建议关注标的：拓普集团、三花智控、贝斯特、鼎智科技、柯力传感、优必选、汇川技术、伟创电气、雷赛智能、中大力德、索辰科技。

➤ **风险提示。**人形机器人产业化进度不及预期、政策推动不及预期等。

**表 1 2021-2024 年国家层面人形机器人相关政策/计划**

时间	相关部门	政策/计划	相关内容摘要
2024	工业和信息化部等七部门	关于推动未来产业创新发展的实施意见	做优信息服务产品，发展下一代操作系统，推广开源技术；做强未来高端装备，突破人形机器人、量子计算机等产品...
2024	工业和信息化部、应急管理部	关于加快应急机器人发展的指导意见	到 2025 年，要研发一批先进应急机器人，大幅提升科学化、专业化、精细化和智能化水平；建设一批重点场景应急机器人实战测试和示范应用基地，逐步完善发展生态体系...
2023	工业和信息化部	人形机器人创新发展指导意见	打造人形机器人“大脑”和“小脑”、突破“肢体”关键技术、健全技术创新体系。打造整机产品、夯实基础部组件、推动软件创新。
2023	工业和信息化部、教育部等	“机器人+”应用行动实施方案	聚焦 10 大应用重点领域，突破 100 种以上机器人创新应用技术及解决方案，推广 200 个以上具有较高技术水平、创新应用模式和显著应用成效的机器人典型应用场景...
2021	工业和信息化部	“十四五”机器人产业发展规划	到 2025 年，机器人产业营业收入年均增速超过 20%；形成一批具有国际竞争力的领军企业及一大批创新能力强、成长性好的专精特新“小巨人”企业，建成 3-5 个有国际影响力的产业集群；制造业机器人密度实现翻番...
2021	工业和信息化部等八部门	“十四五”智能制造发展规划	到 2025 年，规模以上制造业企业大部分实现数字化网络化，重点行业骨干企业初步应用智能化；到 2035 年，规模以上制造业企业全面普及数字化网络化，重点行业骨干企业基本实现智能化...
2021	工信部、国家卫生健康委	健康养老产业发展行动计划（2021-2025 年）	推进物联网、大数据、云计算、人工智能、区块链等新一代信息技术以及移动终端、可穿戴设备、服务机器人等智能设备在居家、社区、机构等养老场景集成应用...

资料来源：CMR 人形机器人联合体微信公众号，HTI

**表 2 2021-2024 年各省市人形机器人相关政策/计划**

时间	省市	政策/计划	相关内容摘要
2023	北京市	北京市机器人产业创新发展行动方案（2023-2025 年）	加紧布局人形机器人，对标国际领先人形机器人产品，支持企业和高校院所开展人形机器人整机产品、关键零部件攻关和工程化，加快建设北京市人形机器人产业创新中心...
2023	北京市	北京经济技术开发区机器人产业高质量发展三年行动计划（2023-2025 年）	到 2025 年，机器人研发投入年复合增长率达 50% 以上，搭建 50 个机器人应用场景示范项目，规模以上工业企业机器人密度达到 360 台/万人，产值规模达到 100 亿元...
2023	北京市	北京市促进机器人产业创新发展的若干措施	由机器人骨干企业牵头，整合国内外一流创新资源，组建人形机器人创新中心，开展关键共性技术研究。支持机器人企业与“智能机器人与系统高精尖创新中心”联合开展产业化攻关...
2023	上海市	上海市推动制造业高质量发展三年行动计划（2023-2025 年）	瞄准人工智能技术前沿，构建通用大模型，面向垂直领域发展产业生态，建设国际算法创新基地，加快人形机器人创新发展...
2023	上海市	上海市建设具有全球影响力的科技创新中心“十四五”规划	研发高端精密减速器、控制器、伺服电机等基础部件，突破机器人轻量化设计、多轴驱控一体化、信息感知与导航、机器人操作系统、人机交互与自主编程等共性关键技术...
2023	上海市	上海市促进智能机器人产业高质量发展创新发展行动方案（2023-2025 年）	到 2025 年，打造具有全球影响力的机器人产业创新高地；促进三个突破，在品牌、应用场景和产业规模方面实现“十百千”突破；建设三个公共服务平台...
2024	上海市	《人形机器人分类分级应用指南》和《具身智能智能化等级分级指南》	明确了人形机器人在结构外观、移动方式、智能模型等方面的分类，并根据具身智能、下肢运动、上肢作业、应用环境等因素划分技术等级，以及根据感知、认知、决策、自主等核心能力划分智能化等级...
2022	广东省	广东省新一代人工智能创新发展行动计划（2022-2025 年）	支持在机器学习自动化、大数据智能、通用基础模型、无监督跨模态大模型、人机混合群体智能、知识理解与推理、协同控制与优化决策、可解释人工智能等领域开展技术攻关...
2021	广东省	广东省培育智能机器人战略性新兴产业集群行动计划（2021-2025 年）	到 2025 年，智能机器人产业营业收入达到 800 亿元，其中服务机器人行业营业收入达到 200 亿元，无人机（船）行业营业收入达到 500 亿元，工业机器人年产量超过 10 万台...
2023	广东省	深圳市加快推动人工智能高质量发展水平应用行动方案（2023-2024 年）	聚焦通用大模型、智能算力芯片、智能传感器、智能机器人、智能网联汽车等领域，实施人工智能科技重大专项扶持计划，重点支持基于国内外芯片和算法的开源通用大模型...
2022	广东省	深圳市人民政府关于发展壮大战略性新兴产业集群和培育发展未来产业的意见	重点发展工业机器人、服务机器人、特种机器人、无人机（船）等领域，突破减速器、控制器、伺服系统等关键零部件和集成应用技术，扩展智能机器人在电子信息制造、汽车、航空航天等高端制造应用场景...
2024	广东省	深圳市龙华区推动人工智能及机器人产业发展若干措施	为人工智能赋能千行百业提供支持，通过发放算力券为企业提供补贴，补贴额度不超过企业采购金额的 30%，上限不超过 300 万元...
2024	广东省	东莞市支持智能机器人产业发展若干措施	抢抓人形机器人发展机遇。立足特色和产业优势，通过降低门槛，提高资助比例和资助额度等方式给予倾斜性政策支持，招引和培育人形机器人企业，促进产业汇聚发展...
2023	广东省	佛山市机器人及相关产业发展规划（2023-2030 年）	至 2025 年，佛山机器人及相关产业营收从 515 亿元增长到 1000 亿元，用三年时间实现倍增。至 2030 年，机器人及相关产业营收从 1000 亿元增长到 2000 亿元...
2024	江苏省	江苏省机器人产业创新发展行动方案	到 2025 年，我省机器人产业链规模达 2000 亿元左右，机器人核心产业规模达到 250 亿元以上，成为全国机器人产业创新发展和集成应用高地；到 2027 年，我省机器人产业综合实力达到国际先进水平...
2023	江苏省	江苏省关于培育发展未来产业的指导意见	谋划布局量子科技、深海深地空天、类人机器人、先进核能等一批前沿性未来产业，初步形成“10+x”未来产业体系...



2021	江苏省	江苏省“十四五”制造业高质量发展规划	大力发展消防应急、智能巡检等特种机器人和手术诊疗、康复养护等服务机器人，进一步提升高性能减速器、高精度伺服驱动系统、先进控制器、新型智能传感器等核心零部件自主可控水平...
2023	江苏省	苏州市人工智能产业创新集群行动计划（2023-2025年）	聚焦人工智能关键核心技术领域，在语音识别、自动驾驶、计算机视觉、自然语言处理、机器人等优势领域加强研发投入，实现核心技术突破...
2023	湖北省	湖北省数字经济高质量发展若干政策措施	鼓励省内企业联合科研院所面向未来产业，开展6G、量子科技、人形机器人、元宇宙、人工智能等领域原创性研发，对相关企业提供研发费用加计扣除超出上一年度的增量部分给予补助...
2022	湖北省	湖北省人工智能产业“十四五”发展规划	大力发展智能服务机器人，以智能感知、模式识别、智能分析和智能决策为重点，推进教育娱乐、医疗康复、养老陪护等特定应用场景的智能服务机器人研发及产业化...
2022	天津市	天津市智能制造发展“十四五”规划	重点培育一批专业性强、行业特色明显的智能制造系统集成服务商和一批具备整体设计能力和解决方案提供能力的专业化机器人及智能装备系统集成企业，开展自主品牌机器人和智能装备的应用示范和系统集成服务...
2021	浙江省	浙江省高端装备制造业发展“十四五”规划	开展伺服电机、精密减速器、伺服驱动器、执行器、传感器、人机物交互系统等机器人关键核心部件工程化攻关。开展整机、部件、集成应用等机器人关键共性技术攻关...
2023	浙江省	浙江省人民政府办公厅关于培育发展未来产业的指导意见	发展仿生机器人。开展仿生感知认知、生机电融合、人工智能视觉导航等技术研究突破与系统集成，强化商用场景和个人、家庭应用场景探索...
2024	浙江省	杭州市促进人形机器人产业创新发展的若干政策措施	将人形机器人整机、软件算法及关键零部件列入杭州市重点科研项目支持范围，梳理形成攻关清单，推动人形机器人“大脑、小脑、肢体”等关键技术攻关；支持打造人形机器人产业链，鼓励产业链集聚发展；积极发展人形机器人产业后市场服务，围绕工业制造、市政巡检、医疗康养、文旅服务、应急作业、安保巡逻、城市管理、教育科研、生活服务等领域，全力打造一批优质应用场景并发布推广等。
2024	四川省	成都市人民政府关于前瞻培育未来产业构筑高质量发展新动能的实施意见	促进算法、算力、数据的融合提升和系统应用，打造数实融合、虚实结合的数字产业新形态，重点培育人形机器人、类脑智能、元宇宙、柔性电子、先进计算及数据服务等细分领域...
2024	安徽省	安徽省人形机器人产业发展行动计划（2024—2027年）	到2027年，围绕“23456”目标体系，初步构建安徽省人形机器人创新体系和产业生态，形成产业化能力。到2030年，人形机器人产业化进程加速，应用场景更加丰富，相关产品深度融入实体经济，建成国内有重要影响力的人形机器人产业发展高地...
2023	河北省	河北省支持机器人产业发展若干措施	重点在五个方面发力推进机器人产业高质量发展。编制机器人创新应用案例集推广100项基于“机器人化”的智能制造和工业互联网创新发展重点项目...
2021	福建省	福建省“十四五”制造业高质量发展专项规划	围绕汽车、机械、电子、轻工、化工和危险品制造等工业机器人特定机器人，以及医疗健康、家庭服务、教育娱乐等服务机器人应用...
2022	山东省	山东省“十四五”战略性新兴产业发展规划	以机器人整机制造为牵引，加快突破高精度减速器、高性能控制器、传感器与末端执行器等关键技术及核心零部件...
2024	山东省	山东省促进人形机器人产业创新发展实施方案（2024—2027年）	以技术突破、产品创新、场景应用、生态培育为重点，山东将加快推进人形机器人自主化、智能化、高端化发展，到2025年，人形机器人创新体系初步建立，整机产品实现批量生产，在制造、民生、服务等领域得到示范应用...
2023	江西省	江西省未来产业发展中长期规划（2023-2035年）	以南昌、九江、吉安、赣州、新余等为重点，推动人工智能与机器人技术深度融合，突破机器人系统开发、操作系统等共性技术以及研发仿生感知与认知、生机电融合等前沿技术，构建智能机器人创新生态和发展体系...
2023	重庆市	重庆市AI及服务机器人产业集群高质量发展行动计划（2023—2027年）	到2027年，全市AI及服务机器人产业集群建设取得重要进展，人工智能算力显著增强，服务机器人领域AI技术研发能力和应用深度走在全国前列...
2024	重庆市	支持具身智能机器人产业创新发展若干政策措施	支持创新平台建设主要包括组建产业研究院、产业创新综合体、制造业创新中心，建设企业技术中心、产业技术工程化中心、重点实验室、概念验证中心等；推动关键技术攻关主要包括两方面，一方面是针对机器人硬件和操作系统，通过部署市级科技创新重大重点项目推动发展；另一方面是针对具身大模型生态体系相关技术，通过“揭榜挂帅”方式推动发展...

资料来源：CMR 人形机器人联合体微信公众号，安徽省工业和信息化厅，山东省工业和信息化厅，山东省人民政府，重庆市经济和信息化委员会，杭州市人民政府官网，HTI

## APPENDIX 1

### Summary

#### Investment Highlights:

#### Policy Support

The Hangzhou Municipal Government issued policies to promote humanoid robot industry innovation. Effective from January 22, 2025, to December 31, 2027, these policies aim to support key projects in humanoid robot development, including whole machines, software algorithms, and components. The focus is on advancing technologies like robot 'brains' and 'limbs', building industry chains, and developing service markets in various sectors.

#### Whole Machine Dynamics

Zhuji Power's full-size humanoid robot engineering is improving, showcasing enhanced multi-joint movement and stability. The design optimizes cable layout, increasing stability and joint range. High torque density joints enhance control, allowing complex movements.

Zhiyuan Robot's 1000th general-purpose robot was launched on January 6, 2025, including 731 bipedal humanoid robots and 269 wheeled robots.

Guangzhou Automobile Group unveiled the third-generation GoMate humanoid robot, featuring a variable wheel-foot structure with 38 degrees of freedom, capable of stable and efficient movement.

#### Investment Advice

Suggested targets: Tuopu Group, Zhejiang Sanhua Intelligent Controls, Wuxi Best Precision Machinery, Jiangsu DINGS Intelligent Control Technology, Keli Sensing Technology (Ningbo), Ubtech Robotics Corp Ltd, Shenzhen Inovance Technology, Veichi, China Leadshine Technology, Ningbo Zhongda Leader Intelligent Transmission, Shanghai Suochen Information Technology Co.,Ltd.

#### Risk Warning

Humanoid robot industry progress and policy support may be weaker than expected.

## 附录 APPENDIX

### 重要信息披露

本研究报告由海通国际分销，海通国际是由海通国际研究有限公司(HTIRL)，Haitong Securities India Private Limited (HSIPL)，Haitong International Japan K.K. (HTIJKK)和海通国际证券有限公司(HTISCL)的证券研究团队所组成的全球品牌，海通国际证券集团(HTISG)各成员分别在其许可的司法管辖区内从事证券活动。

### IMPORTANT DISCLOSURES

This research report is distributed by Haitong International, a global brand name for the equity research teams of Haitong International Research Limited ("HTIRL"), Haitong Securities India Private Limited ("HSIPL"), Haitong International Japan K.K. ("HTIJKK"), Haitong International Securities Company Limited ("HTISCL"), and any other members within the Haitong International Securities Group of Companies ("HTISG"), each authorized to engage in securities activities in its respective jurisdiction.

### HTIRL 分析师认证 Analyst Certification:

我，徐柏乔，在此保证 (i) 本研究报告中的意见准确反映了我们对本研究中提及的任何或所有目标公司或上市公司的个人观点，并且 (ii) 我的报酬中没有任何部分与本研究报告中表达的具体建议或观点直接或间接相关；及就此报告中所讨论目标公司的证券，我们（包括我们的家属）在其中均不持有任何财务利益。我和我的家属（我已经告知他们）将不会在本研究报告发布后的3个工作日内交易此研究报告所讨论目标公司的证券。I, Baiqiao Xu, certify that (i) the views expressed in this research report accurately reflect my personal views about any or all of the subject companies or issuers referred to in this research and (ii) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report; and that I (including members of my household) have no financial interest in the security or securities of the subject companies discussed. I and my household, whom I have already notified of this, will not deal in or trade any securities in respect of the issuer that I review within 3 business days after the research report is published.

我，赵玥炜，在此保证 (i) 本研究报告中的意见准确反映了我们对本研究中提及的任何或所有目标公司或上市公司的个人观点，并且 (ii) 我的报酬中没有任何部分与本研究报告中表达的具体建议或观点直接或间接相关；及就此报告中所讨论目标公司的证券，我们（包括我们的家属）在其中均不持有任何财务利益。我和我的家属（我已经告知他们）将不会在本研究报告发布后的3个工作日内交易此研究报告所讨论目标公司的证券。I, Yuewei Zhao, certify that (i) the views expressed in this research report accurately reflect my personal views about any or all of the subject companies or issuers referred to in this research and (ii) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report; and that I (including members of my household) have no financial interest in the security or securities of the subject companies discussed. I and my household, whom I have already notified of this, will not deal in or trade any securities in respect of the issuer that I review within 3 business days after the research report is published.

我，余伟民，在此保证 (i) 本研究报告中的意见准确反映了我们对本研究中提及的任何或所有目标公司或上市公司的个人观点，并且 (ii) 我的报酬中没有任何部分与本研究报告中表达的具体建议或观点直接或间接相关；及就此报告中所讨论目标公司的证券，我们（包括我们的家属）在其中均不持有任何财务利益。我和我的家属（我已经告知他们）将不会在本研究报告发布后的3个工作日内交易此研究报告所讨论目标公司的证券。I, Weimin Yu, certify that (i) the views expressed in this research report accurately reflect my personal views about any or all of the subject companies or issuers referred to in this research and (ii) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report; and that I (including members of my household) have no financial interest in the security or securities of the subject companies discussed. I and my household, whom I have already notified of this, will not deal in or trade any securities in respect of the issuer that I review within 3 business days after the research report is published.

我，陈昊飞，在此保证 (i) 本研究报告中的意见准确反映了我们对本研究中提及的任何或所有目标公司或上市公司的个人观点，并且 (ii) 我的报酬中没有任何部分与本研究报告中表达的具体建议或观点直接或间接相关；及就此报告中所讨论目标公司的证券，我们（包括我们的家属）在其中均不持有任何财务利益。我和我的家属（我已经告知他们）将不会在本研究报告发布后的3个工作日内交易此研究报告所讨论目标公司的证券。I, Haofei Chen, certify that (i) the views expressed in this research report accurately reflect my personal views about any or all of the subject companies or issuers referred to in this research and (ii) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report; and that I (including members of my household) have no financial interest in the security or securities of the subject companies discussed. I and my household, whom I have already notified of this, will not deal in or trade any securities in respect of the issuer that I review within 3 business days after the research report is published.

### 利益冲突披露 Conflict of Interest Disclosures

海通国际及其某些关联公司可从事投资银行业务和/或对本研究中的特定股票或公司进行做市或持有自营头寸。就本研究报告而言，以下是有关该等关系的披露事项（以下披露不能保证及时无遗漏，如需了解及时全面信息，请发邮件至 ERD-Disclosure@htisec.com）

HTI and some of its affiliates may engage in investment banking and / or serve as a market maker or hold proprietary trading positions of certain stocks or companies in this research report. As far as this research report is concerned, the following are the disclosure matters related to such relationship (As the following disclosure does not ensure timeliness and completeness, please send an email to ERD-Disclosure@htisec.com if timely and comprehensive information is needed).

603662.CH 目前或过去 12 个月内是海通的客户。海通向客户提供非投资银行业务的证券相关业务服务。

603662.CH is/was a client of Haitong currently or within the past 12 months. The client has been provided for non-investment-banking securities-related services.

603662.CH 及 688698.CH 目前或过去 12 个月内是海通的客户。海通向客户提供非证券业务服务。

603662.CH and 688698.CH are/were a client of Haitong currently or within the past 12 months. The client has been provided for non-securities services.

海通在过去的 12 个月中从 603662.CH 及 688698.CH 获得除投资银行服务以外之产品或服务的报酬。

Haitong has received compensation in the past 12 months for products or services other than investment banking from 603662.CH and 688698.CH.

### 评级定义（从 2020 年 7 月 1 日开始执行）：

海通国际（以下简称“HTI”）采用相对评级系统来为投资者推荐我们覆盖的公司：优于大市、中性或弱于大市。投资者应仔细阅读 HTI 的评级定义。并且 HTI 发布分析师观点的完整信息，投资者应仔细阅读全文而非仅看评级。在任何情

### 评级分布 Rating Distribution

况下，分析师的评级和研究都不能作为投资建议。投资者的买卖股票的决策应基于各自情况（比如投资者的现有持仓）以及其他因素。

### 分析师股票评级

**优于大市**，未来 12-18 个月内预期相对基准指数涨幅在 10%以上，基准定义如下

**中性**，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

**弱于大市**，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

各地股票基准指数：日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100, 美国 – SP500; 其他所有中国概念股 – MSCI China.

### Ratings Definitions (from 1 Jul 2020):

Haitong International uses a relative rating system using Outperform, Neutral, or Underperform for recommending the stocks we cover to investors. Investors should carefully read the definitions of all ratings used in Haitong International Research. In addition, since Haitong International Research contains more complete information concerning the analyst's views, investors should carefully read Haitong International Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

### Analyst Stock Ratings

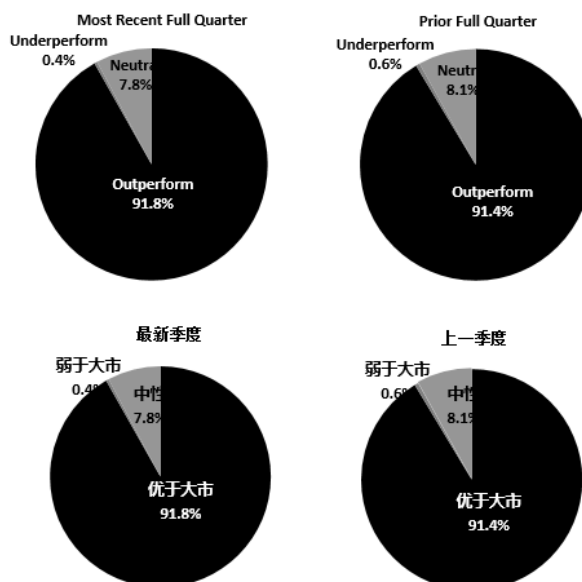
**Outperform:** The stock's total return over the next 12-18 months is expected to exceed the return of its relevant broad market benchmark, as indicated below.

**Neutral:** The stock's total return over the next 12-18 months is expected to be in line with the return of its relevant broad market benchmark, as indicated below. For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category.

**Underperform:** The stock's total return over the next 12-18 months is expected to be below the return of its relevant broad market benchmark, as indicated below.

**Benchmarks for each stock's listed region are as follows: Japan – TOPIX, Korea – KOSPI, Taiwan – TAIEX, India – Nifty100, US – SP500; for all other China-concept stocks – MSCI China.**

## Ratings Distribution



### 截至 2024 年 9 月 30 日海通国际股票研究评级分布

	优于大市	中性 (持有)	弱于大市
海通国际股票研究覆盖率	91.8%	7.8%	0.4%
投资银行客户*	3.5%	4.4%	0.0%

\*在每个评级类别里投资银行客户所占的百分比。

上述分布中的买入，中性和卖出分别对应我们当前优于大市，中性和落后大市评级。

只有根据 FINRA/NYSE 的评级分布规则，我们才将中性评级划入持有这一类别。请注意在上表中不包含非评级的股票。

### 此前的评级系统定义（直至 2020 年 6 月 30 日）：

买入，未来 12-18 个月内预期相对基准指数涨幅在 10%以上，基准定义如下

中性，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

卖出，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

各地股票基准指数：日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100; 其他所有中国概念股 – MSCI China.

### Haitong International Equity Research Ratings Distribution, as of September 30, 2024

Outperform	Neutral (hold)	Underperform
------------	-------------------	--------------



HTI Equity Research Coverage	91.8%	7.8%	0.4%
IB clients*	3.5%	4.4%	0.0%

\*Percentage of investment banking clients in each rating category.

BUY, Neutral, and SELL in the above distribution correspond to our current ratings of Outperform, Neutral, and Underperform.

For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category. Please note that stocks with an NR designation are not included in the table above.

**Previous rating system definitions (until 30 Jun 2020):**

**BUY:** The stock's total return over the next 12-18 months is expected to exceed the return of its relevant broad market benchmark, as indicated below.

**NEUTRAL:** The stock's total return over the next 12-18 months is expected to be in line with the return of its relevant broad market benchmark, as indicated below. For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category.

**SELL:** The stock's total return over the next 12-18 months is expected to be below the return of its relevant broad market benchmark, as indicated below.

**Benchmarks for each stock's listed region are as follows: Japan – TOPIX, Korea – KOSPI, Taiwan – TAIEX, India – Nifty100; for all other China-concept stocks – MSCI China.**

**海通国际非评级研究:** 海通国际发布计量、筛选或短篇报告，并在报告中根据估值和其他指标对股票进行排名，或者基于可能的估值倍数提出建议价格。这种排名或建议价格并非为了进行股票评级、提出目标价格或进行基本面估值，而仅供参考使用。

**Haitong International Non-Rated Research:** Haitong International publishes quantitative, screening or short reports which may rank stocks according to valuation and other metrics or may suggest prices based on possible valuation multiples. Such rankings or suggested prices do not purport to be stock ratings or target prices or fundamental values and are for information only.

**海通国际 A 股覆盖:** 海通国际可能会就沪港通及深港通的中国 A 股进行覆盖及评级。海通证券 (600837.CH)，海通国际于上海的母公司，也会于中国发布中国 A 股的研究报告。但是，海通国际使用与海通证券不同的评级系统，所以海通国际与海通证券的中国 A 股评级可能有所不同。

**Haitong International Coverage of A-Shares:** Haitong International may cover and rate A-Shares that are subject to the Hong Kong Stock Connect scheme with Shanghai and Shenzhen. Haitong Securities (HS; 600837 CH), the ultimate parent company of HTISG based in Shanghai, covers and publishes research on these same A-Shares for distribution in mainland China. However, the rating system employed by HS differs from that used by HTI and as a result there may be a difference in the HTI and HS ratings for the same A-share stocks.

**海通国际优质 100 A 股 (Q100) 指数:** 海通国际 Q100 指数是一个包括 100 支由海通证券覆盖的优质中国 A 股的计量产品。这些股票是通过基于质量的筛选过程，并结合对海通证券 A 股团队自下而上的研究。海通国际每季对 Q100 指数成分作出复审。

**Haitong International Quality 100 A-share (Q100) Index:** HTI's Q100 Index is a quant product that consists of 100 of the highest-quality A-shares under coverage at HS in Shanghai. These stocks are carefully selected through a quality-based screening process in combination with a review of the HS A-share team's bottom-up research. The Q100 constituent companies are reviewed quarterly.

**盟浪义利 (FIN-ESG) 数据免责声明条款:** 在使用盟浪义利 (FIN-ESG) 数据之前，请务必仔细阅读本条款并同意本声明：

第一条 义利 (FIN-ESG) 数据系由盟浪可持续数字科技有限责任公司 (以下简称“本公司”) 基于合法取得的公开信息评估而成，本公司对信息的准确性及完整性不作任何保证。对公司的评估结果仅供参考，并不构成对任何个人或机构投资建议，也不能作为任何个人或机构购买、出售或持有相关金融产品的依据。本公司不对任何个人或机构投资者因使用本数据表述的评估结果造成的任何直接或间接损失负责。

第二条 盟浪并不因收到此评估数据而将收件人视为客户，收件人使用此数据时应根据自身实际情况作出自我独立判断。本数据所载内容反映的是盟浪在最初发布本数据日期当日的判断，盟浪有权在不发出通知的情况下更新、修订与发出其他与本数据所载内容不一致或有不同结论的数据。除非另行说明，本数据 (如财务业绩数据等) 仅代表过往表现，过往的业绩表现不作为日后回报的预测。

第三条 本数据版权归本公司所有，本公司依法保留各项权利。未经本公司事先书面许可授权，任何个人或机构不得将本数据中的评估结果用于任何营利性目的，不得对本数据进行修改、复制、编译、汇编、再次编辑、改编、删减、缩写、节选、发行、出租、展览、表演、放映、广播、信息网络传播、摄制、增加图标及说明等，否则因此给盟浪或其他第三方造成损失的，由用户承担相应的赔偿责任，盟浪不承担责任。

第四条 如本免责声明未约定，而盟浪网站平台载明的其他协议内容 (如《盟浪网站用户注册协议》《盟浪网用户服务 (含认证) 协议》《盟浪网隐私政策》等) 有约定的，则按其他协议的约定执行；若本免责声明与其他协议约定存在冲突或不一致的，则以本免责声明约定为准。

**SusallWave FIN-ESG Data Service Disclaimer:** Please read these terms and conditions below carefully and confirm your agreement and acceptance with these terms before using SusallWave FIN-ESG Data Service.

1. FIN-ESG Data is produced by SusallWave Digital Technology Co., Ltd. (In short, SusallWave)'s assessment based on legal publicly accessible information. SusallWave shall not be responsible for any accuracy and completeness of the information. The assessment result is for reference only. It is not for any investment advice for any individual or institution and not for basis of purchasing, selling or holding any relative financial products. We will not be liable for any direct or indirect loss of any individual or institution as a result of using SusallWave FIN-ESG Data.

2. SusallWave do not consider recipients as customers for receiving these data. When using the data, recipients shall make your own independent judgment according to your practical individual status. The contents of the data reflect the judgment of us only on the release day. We have right to update and amend the data and release other data that contains inconsistent contents or different conclusions without notification. Unless expressly stated, the data (e.g., financial performance data) represents past performance only and the past performance cannot be viewed as the prediction of future return.

3. The copyright of this data belongs to SusallWave, and we reserve all rights in accordance with the law. Without the prior written permission of our company, none of individual or institution can use these data for any profitable purpose. Besides, none of individual or institution can take actions such as amendment, replication, translation, compilation, re-editing, adaption, deletion, abbreviation, excerpts, issuance, rent, exhibition, performance, projection, broadcast, information network transmission, shooting, adding icons and instructions. If any loss of SusallWave or any third-party is caused by those actions, users shall bear the corresponding compensation liability. SusallWave shall not be responsible for any loss.



4. If any term is not contained in this disclaimer but written in other agreements on our website (e.g. *User Registration Protocol of SusallWave Website*, *User Service (including authentication) Agreement of SusallWave Website*, *Privacy Policy of Susallwave Website*), it should be executed according to other agreements. If there is any difference between this disclaimer and other agreements, this disclaimer shall be applied.

#### 重要免责声明:

**非印度证券的研究报告:** 本报告由海通国际证券集团有限公司 (“HTISGL”) 的全资附属公司海通国际研究有限公司 (“HTIRL”) 发行, 该公司是根据香港证券及期货条例 (第 571 章) 持有第 4 类受规管活动 (就证券提供意见) 的持牌法团。该研究报告在 HTISGL 的全资附属公司 Haitong International (Japan) K.K. (“HTIJKK”) 的协助下发行, HTIJKK 是由日本关东财务局监管为投资顾问。

**印度证券的研究报告:** 本报告由从事证券交易、投资银行及证券分析及受 Securities and Exchange Board of India (“SEBI”) 监管的 Haitong Securities India Private Limited (“HTSIPL”) 所发行, 包括制作及发布涵盖 BSE Limited (“BSE”) 和 National Stock Exchange of India Limited (“NSE”) 上市公司 (统称为「印度交易所」) 的研究报告。HTSIPL 于 2016 年 12 月 22 日被收购并成为海通国际证券集团有限公司 (“HTISG”) 的一部分。

所有研究报告均以海通国际为名作为全球品牌, 经许可由海通国际证券股份有限公司及/或海通国际证券集团的其他成员在其司法管辖区发布。

本文件所载信息和观点已被编译或源自可靠来源, 但 HTIRL、HTISGL 或任何其他属于海通国际证券集团有限公司 (“HTISG”) 的成员对其准确性、完整性和正确性不做任何明示或暗示的声明或保证。本文件中所有观点均截至本报告日期, 如有更改, 恕不另行通知。本文件仅供参考使用。文件中提及的任何公司或其股票的说明并非意图展示完整的内容, 本文件并非/不应被解释为对证券买卖的明示或暗示地出价或征价。在某些司法管辖区, 本文件中提及的证券可能无法进行买卖。如果投资产品以投资者本国货币以外的币种进行计价, 则汇率变化可能会对投资产生不利影响。过去的表现并不一定代表将来的结果。某些特定交易, 包括设计金融衍生工具的, 有产生重大风险的可能性, 因此并不适合所有的投资者。您还应认识到本文件中的建议并非为您量身定制。分析师并未考虑到您自身的财务情况, 如您的财务状况和风险偏好。因此您必须自行分析并在适用的情况下咨询自己的法律、税收、会计、金融和其他方面的专业顾问, 以期在投资之前评估该项建议是否适合于您。若由于使用本文件所载的材料而产生任何直接或间接的损失, HTISG 及其董事、雇员或代理人对此均不承担任何责任。

除对本文内容承担责任的分析师除外, HTISG 及我们的关联公司、高级管理人员、董事和雇员, 均可不时作为主事人就本文件所述的任何证券或衍生品持有长仓或短仓以及进行买卖。HTISG 的销售员、交易员和其他专业人士均可向 HTISG 的相关客户和公司提供与本文件所述意见相反的口头或书面市场评论意见或交易策略。HTISG 可做出与本文件所述建议或意见不一致的投资决策。但 HTIRL 没有义务来确保本文件的收件人了解到该等交易决定、思路或建议。

请访问海通国际网站 [www.equities.htisec.com](http://www.equities.htisec.com), 查阅更多有关海通国际为预防和避免利益冲突设立的组织和行政安排的内容信息。

**非美国分析师披露信息:** 本项研究首页上列明的海通国际分析师并未在 FINRA 进行注册或者取得相应的资格, 并且不受美国 FINRA 有关与本项研究目标公司进行沟通、公开露面和自营证券交易的第 2241 条规则之限制。

#### IMPORTANT DISCLAIMER

**For research reports on non-Indian securities:** The research report is issued by Haitong International Research Limited (“HTIRL”), a wholly owned subsidiary of Haitong International Securities Group Limited (“HTISGL”) and a licensed corporation to carry on Type 4 regulated activity (advising on securities) for the purpose of the Securities and Futures Ordinance (Cap. 571) of Hong Kong, with the assistance of Haitong International (Japan) K.K. (“HTIJKK”), a wholly owned subsidiary of HTISGL and which is regulated as an Investment Adviser by the Kanto Finance Bureau of Japan.

**For research reports on Indian securities:** The research report is issued by Haitong Securities India Private Limited (“HSIPL”), an Indian company and a Securities and Exchange Board of India (“SEBI”) registered Stock Broker, Merchant Banker and Research Analyst that, inter alia, produces and distributes research reports covering listed entities on the BSE Limited (“BSE”) and the National Stock Exchange of India Limited (“NSE”) (collectively referred to as “Indian Exchanges”). HSIPL was acquired and became part of the Haitong International Securities Group of Companies (“HTISG”) on 22 December 2016.

All the research reports are globally branded under the name Haitong International and approved for distribution by Haitong International Securities Company Limited (“HTISCL”) and/or any other members within HTISG in their respective jurisdictions.

The information and opinions contained in this research report have been compiled or arrived at from sources believed to be reliable and in good faith but no representation or warranty, express or implied, is made by HTIRL, HTISCL, HSIPL, HTIJKK or any other members within HTISG from which this research report may be received, as to their accuracy, completeness or correctness. All opinions expressed herein are as of the date of this research report and are subject to change without notice. This research report is for information purpose only. Descriptions of any companies or their securities mentioned herein are not intended to be complete and this research report is not, and should not be construed expressly or impliedly as, an offer to buy or sell securities. The securities referred to in this research report may not be eligible for purchase or sale in some jurisdictions. If an investment product is denominated in a currency other than an investor's home currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Certain transactions, including those involving derivatives, give rise to substantial risk and are not suitable for all investors. You should also bear in mind that recommendations in this research report are not tailor-made for you. The analyst has not taken into account your unique financial circumstances, such as your financial situation and risk appetite. You must, therefore, analyze and should, where applicable, consult your own legal, tax, accounting, financial and other professional advisers to evaluate whether the recommendations suits you before investment. Neither HTISG nor any of its directors, employees or agents accepts any liability whatsoever for any direct or consequential loss arising from any use of the materials contained in this research report.

HTISG and our affiliates, officers, directors, and employees, excluding the analysts responsible for the content of this document, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research report. Sales, traders, and other professionals of HTISG may provide oral or written market commentary or trading strategies to the relevant clients and the companies within HTISG that reflect opinions that are contrary to the opinions expressed in this research report. HTISG may make investment decisions that are inconsistent with the recommendations or views expressed in this research report. HTI is under no obligation to ensure that such other trading decisions, ideas or recommendations are brought to the attention of any recipient of this research report.

Please refer to HTI's website [www.equities.htisec.com](http://www.equities.htisec.com) for further information on HTI's organizational and administrative arrangements set up for the prevention and avoidance of conflicts of interest with respect to Research.

**Non U.S. Analyst Disclosure:** The HTI analyst(s) listed on the cover of this Research is (are) not registered or qualified as a research analyst with FINRA and are not subject to U.S. FINRA Rule 2241 restrictions on communications with companies that are the subject of the Research; public appearances; and trading securities by a research analyst.

#### 分发和地区通知:

除非下文另有规定, 否则任何希望讨论本报告或者就本项研究中讨论的任何证券进行任何交易的收件人均应联系其所在国家或地区的海通国际销售人员。

**香港投资者的通知事项:** 海通国际证券股份有限公司(“HTISCL”)负责分发该研究报告, HTISCL 是在香港有权实施第 1 类受规管活动(从事证券交易)的持牌公司。该研究报告并不构成《证券及期货条例》(香港法例第 571 章)(以下简称“SFO”)所界定的要约邀请, 证券要约或公众要约。本研究报告仅提供给 SFO 所界定的“专业投资者”。本研究报告未经过证券及期货事务监察委员会的审查。您不应仅根据本研究报告中所载的信息做出投资决定。本研究报告的收件人就研究报告中产生或与之相关的任何事宜请联系 HTISCL 销售人员。

**美国投资者的通知事项:** 本研究报告由 HTIRL, HSIPL 或 HTIJKK 编写。HTIRL, HSIPL, HTIJKK 以及任何非 HTISG 美国联营公司, 均未在美国注册, 因此不受美国关于研究报告编制和研究分析人员独立性规定的约束。本研究报告提供给依照 1934 年“美国证券交易法”第 15a-6 条规定的豁免注册的「美国主要机构投资者」(“Major U.S. Institutional Investor”)和「机构投资者」(“U.S. Institutional Investors”)。在向美国机构投资者分发研究报告时, Haitong International Securities (USA) Inc. (“HTI USA”) 将对报告的内容负责。任何收到本研究报告的美国投资者, 希望根据本研究报告提供的信息进行任何证券或相关金融工具买卖的交易, 只能通过 HTI USA。HTI USA 位于 340 Madison Avenue, 12th Floor, New York, NY 10173, 电话 (212) 351-6050。HTI USA 是在美国于 U.S. Securities and Exchange Commission (“SEC”) 注册的经纪商, 也是 Financial Industry Regulatory Authority, Inc. (“FINRA”) 的成员。HTIUSA 不负责编写本研究报告, 也不负责其中包含的分析。在任何情况下, 收到本研究报告的任何美国投资者, 不得直接与分析师直接联系, 也不得通过 HSIPL, HTIRL 或 HTIJKK 直接进行买卖证券或相关金融工具的交易。本研究报告中出现的 HSIPL, HTIRL 或 HTIJKK 分析师没有注册或具备 FINRA 的研究分析师资格, 因此可能不受 FINRA 第 2241 条规定的与目标公司的交流, 公开露面和分析师账户持有的交易证券等限制。投资本研究报告中讨论的任何非美国证券或相关金融工具(包括 ADR)可能存在一定风险。非美国发行的证券可能没有注册, 或不受美国法规的约束。有关非美国证券或相关金融工具的信息可能有限制。外国公司可能不受审计和汇报的标准以及与美国境内生效相符的监管要求。本研究报告中以美元以外的其他货币计价的任何证券或相关金融工具的投资或收益的价值受汇率波动的影响, 可能对该等证券或相关金融工具的价值或收入产生正面或负面影响。美国收件人的所有问询请联系:

Haitong International Securities (USA) Inc.  
340 Madison Avenue, 12th Floor  
New York, NY 10173  
联系人电话: (212) 351 6050

#### DISTRIBUTION AND REGIONAL NOTICES

Except as otherwise indicated below, any Recipient wishing to discuss this research report or effect any transaction in any security discussed in HTI’s research should contact the Haitong International salesperson in their own country or region.

**Notice to Hong Kong investors:** The research report is distributed by Haitong International Securities Company Limited (“HTISCL”), which is a licensed corporation to carry on Type 1 regulated activity (dealing in securities) in Hong Kong. This research report does not constitute a solicitation or an offer of securities or an invitation to the public within the meaning of the SFO. This research report is only to be circulated to “Professional Investors” as defined in the SFO. This research report has not been reviewed by the Securities and Futures Commission. You should not make investment decisions solely on the basis of the information contained in this research report. Recipients of this research report are to contact HTISCL salespersons in respect of any matters arising from, or in connection with, the research report.

**Notice to U.S. investors:** As described above, this research report was prepared by HTIRL, HSIPL or HTIJKK. Neither HTIRL, HSIPL, HTIJKK, nor any of the non U.S. HTISG affiliates is registered in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This research report is provided for distribution to “major U.S. institutional investors” and “U.S. institutional investors” in reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended. When distributing research reports to “U.S. institutional investors,” HTI USA will accept the responsibilities for the content of the reports. Any U.S. recipient of this research report wishing to effect any transaction to buy or sell securities or related financial instruments based on the information provided in this research report should do so only through Haitong International Securities (USA) Inc. (“HTI USA”), located at 340 Madison Avenue, 12th Floor, New York, NY 10173, USA; telephone (212) 351 6050. HTI USA is a broker-dealer registered in the U.S. with the U.S. Securities and Exchange Commission (the “SEC”) and a member of the Financial Industry Regulatory Authority, Inc. (“FINRA”). HTI USA is not responsible for the preparation of this research report nor for the analysis contained therein. Under no circumstances should any U.S. recipient of this research report contact the analyst directly or effect any transaction to buy or sell securities or related financial instruments directly through HSIPL, HTIRL or HTIJKK. The HSIPL, HTIRL or HTIJKK analyst(s) whose name appears in this research report is not registered or qualified as a research analyst with FINRA and, therefore, may not be subject to FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. Investing in any non-U.S. securities or related financial instruments (including ADRs) discussed in this research report may present certain risks. The securities of non-U.S. issuers may not be registered with, or be subject to U.S. regulations. Information on such non-U.S. securities or related financial instruments may be limited. Foreign companies may not be subject to audit and reporting standards and regulatory requirements comparable to those in effect within the U.S. The value of any investment or income from any securities or related financial instruments discussed in this research report denominated in a currency other than U.S. dollars is subject to exchange rate fluctuations that may have a positive or adverse effect on the value of or income from such securities or related financial instruments. All inquiries by U.S. recipients should be directed to:

Haitong International Securities (USA) Inc.  
340 Madison Avenue, 12<sup>th</sup> Floor  
New York, NY 10173  
Attn: Sales Desk at (212) 351 6050

**中华人民共和国的通知事项:** 在中华人民共和国(下称“中国”, 就本报告目的而言, 不包括香港特别行政区、澳门特别行政区和台湾)只有根据适用的中国法律法规而收到该材料的人员方可使用该材料。并且根据相关法律法规, 该材料中的信息并不构成“在中国从事生产、经营活动”。本文件在中国并不构成相关证券的公开发售或认购。无论根据法律规定或其他任何规定, 在取得中国政府所有的批准或许可之前, 任何法人或自然人均不得直接或间接地购买本材料中的任何证券或任何实益权益。接收本文件的人员须遵守上述限制性规定。

**加拿大投资者的通知事项:** 在任何情况下该等材料均不得被解释为在任何加拿大的司法管辖区内出售证券的要约或认购证券的要约邀请。本材料中所述证券在加拿大的任何要约或出售行为均只能在豁免向有关加拿大证券监管机构提交招股说明书的前提下由 Haitong International Securities (USA) Inc. (“HTI USA”) 予以实施, 该公司是一家根据 National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations (“NI 31-103”) 的规定得到「国际交易商豁免」 (“International Dealer Exemption”) 的交易商, 位于艾伯塔省、不列颠哥伦比亚省、安大略省和魁北克省。在加拿大, 该等材料在任何情况下均不得被解释为任何证券的招股说明书、发行备忘录、广告或公开发行。加拿大的任何证券委员会或类似的监管机构均未审查或以任何方式批准该等材料、其中所载的信息或所述证券的优点, 任何与此相反的声明即属违法。在收到该等材料时, 每个加拿大的收件人均将被视为属于 National Instrument 45-106 Prospectus Exemptions 第 1.1 节或者 Securities Act (Ontario) 第 73.3(1) 节所规定的「认可投资者」 (“Accredited Investor”), 或者在适用情况下 National Instrument 31-103 第 1.1 节所规定的「许可投资者」 (“Permitted Investor”)。

**新加坡投资者的通知事项:** 本研究报告由 Haitong International Securities (Singapore) Pte Ltd (“HTISSPL”) 于新加坡提供。HTISSPL 是符合《财务顾问法》2001 (“FAA”) 定义的豁免财务顾问, 可 (a) 提供关于证券, 集体投资计划的部分, 交易所衍生品合约和场外衍生品合约的建议 (b) 发行或公布有关证券、交易所衍生品合约和场外衍生品合约的研究分析或研究报告。本研究报告仅提供给符合《证券及期货法》2001 第 4A 条项下规定的机构投资者。对于因本研究报告而产生的或与之相关的任何问题, 本研究报告的收件人应通过以下信息与 HTISSPL 联系:

Haitong International Securities (Singapore) Pte. Ltd

10 Collyer Quay, #19-01 - #19-05 Ocean Financial Centre, Singapore 049315

电话: (65) 6713 0473

**日本投资者的通知事项:** 本研究报告由海通国际证券有限公司所发布, 旨在分发给从事投资管理的金融服务提供商或注册金融机构 (根据日本金融机构和交易法 (“FIEL”) ) 第 61 (1) 条, 第 17-11 (1) 条的执行及相关条款)。

**英国及欧盟投资者的通知事项:** 本报告由从事投资顾问的 Haitong International Securities Company Limited 所发布, 本报告只面向有投资相关经验的专业客户发布。任何投资或与本报告相关的投资行为只面对此类专业客户。没有投资经验或相关投资经验的客户不得依赖本报告。Haitong International Securities Company Limited 的分支机构的净长期或短期金融权益可能超过本研究报告中提及的实体已发行股本总额的 0.5%。特别提醒有些英文报告有可能此前已经通过中文或其它语言完成发布。

**澳大利亚投资者的通知事项:** Haitong International Securities (Singapore) Pte Ltd, Haitong International Securities Company Limited 和 Haitong International Securities (UK) Limited 分别根据澳大利亚证券和投资委员会 (以下简称“ASIC”) 公司 (废除及过度性) 文书第 2016/396 号规章在澳大利亚分发本项研究, 该等规章免除了根据 2001 年《公司法》在澳大利亚为批发客户提供金融服务时海通国际需持有澳大利亚金融服务许可的要求。ASIC 的规章副本可在以下网站获取: [www.legislation.gov.au](http://www.legislation.gov.au)。海通国际提供的金融服务受外国法律法规规定的管制, 该等法律与在澳大利亚所适用的法律存在差异。

**印度投资者的通知事项:** 本报告由从事证券交易、投资银行及证券分析及受 Securities and Exchange Board of India (“SEBI”) 监管的 Haitong Securities India Private Limited (“HTSIPL”) 所发布, 包括制作及发布涵盖 BSE Limited (“BSE”) 和 National Stock Exchange of India Limited (“NSE”) (统称为「印度交易所」) 研究报告。

研究机构名称: Haitong Securities India Private Limited

SEBI 研究分析师注册号: INH000002590

地址: 1203A, Floor 12A, Tower 2A, One World Center

841 Senapati Bapat Marg, Elphinstone Road, Mumbai 400 013, India

CIN U74140MH2011FTC224070

电话: +91 22 43156800 传真: +91 22 24216327

合规和申诉办公室联系人: Prasanna Chandwaskar; 电话: +91 22 43156803; 电子邮箱: [prasanna.chandwaskar@htisec.com](mailto:prasanna.chandwaskar@htisec.com)

“请注意, SEBI 授予的注册和 NISM 的认证并不保证中介的表现或为投资者提供任何回报保证”。

本项研究仅供收件人使用, 未经海通国际的书面同意不得予以复制和再次分发。

版权所有: 海通国际证券集团有限公司 2019 年。保留所有权利。

**People's Republic of China (PRC):** In the PRC, the research report is directed for the sole use of those who receive the research report in accordance with the applicable PRC laws and regulations. Further, the information on the research report does not constitute "production and business activities in the PRC" under relevant PRC laws. This research report does not constitute a public offer of the security, whether by sale or subscription, in the PRC. Further, no legal or natural persons of the PRC may directly or indirectly purchase any of the security or any beneficial interest therein without obtaining all prior PRC government approvals or licenses that are required, whether statutorily or otherwise. Persons who come into possession of this research are required to observe these restrictions.

**Notice to Canadian Investors:** Under no circumstances is this research report to be construed as an offer to sell securities or as a solicitation of an offer to buy securities in any jurisdiction of Canada. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by Haitong International Securities (USA) Inc., a dealer relying on the "international dealer exemption" under National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations (“NI 31-103”) in Alberta, British Columbia, Ontario and Quebec. This research report is not, and under no circumstances should be construed as, a prospectus, an offering memorandum, an advertisement or a public offering of any securities in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon this research report, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence. Upon receipt of this research report, each Canadian recipient will be deemed to have represented that the investor is an "accredited investor" as such term is defined in section 1.1 of National Instrument 45-106 Prospectus Exemptions or, in Ontario, in section 73.3(1) of the Securities Act (Ontario), as applicable, and a "permitted client" as such term is defined in section 1.1 of NI 31-103, respectively.

**Notice to Singapore investors:** This research report is provided in Singapore by or through Haitong International Securities (Singapore) Pte Ltd ("HTISSPL"). HTISSPL is an Exempt Financial Adviser under the Financial Advisers Act 2001 ("FAA") to (a) advise on securities, units in a collective investment scheme, exchange-traded derivatives contracts and over-the-counter derivatives contracts and (b) issue or promulgate research analyses or research reports on securities, exchange-traded derivatives contracts and over-the-counter derivatives contracts. This research report is only provided to institutional investors, within the meaning of Section 4A of the Securities and Futures Act 2001. Recipients of this research report are to contact HTISSPL via the details below in respect of any matters arising from, or in connection with, the research report:

Haitong International Securities (Singapore) Pte. Ltd.

10 Collyer Quay, #19-01 - #19-05 Ocean Financial Centre, Singapore 049315

Telephone: (65) 6713 0473

**Notice to Japanese investors:** This research report is distributed by Haitong International Securities Company Limited and intended to be distributed to Financial Services Providers or Registered Financial Institutions engaged in investment management (as defined in the Japan Financial Instruments and Exchange Act ("FIEL") Art. 61(1), Order for Enforcement of FIEL Art. 17-11(1), and related articles).

**Notice to UK and European Union investors:** This research report is distributed by Haitong International Securities Company Limited. This research is directed at persons having professional experience in matters relating to investments. Any investment or investment activity to which this research relates is available only to such persons or will be engaged in only with such persons. Persons who do not have professional experience in matters relating to investments should not rely on this research. Haitong International Securities Company Limited's affiliates may have a net long or short financial interest in excess of 0.5% of the total issued share capital of the entities mentioned in this research report. Please be aware that any report in English may have been published previously in Chinese or another language.

**Notice to Australian investors:** The research report is distributed in Australia by Haitong International Securities (Singapore) Pte Ltd, Haitong International Securities Company Limited, and Haitong International Securities (UK) Limited in reliance on ASIC Corporations (Repeal and Transitional) Instrument 2016/396, which exempts those HTISG entities from the requirement to hold an Australian financial services license under the Corporations Act 2001 in respect of the financial services it provides to wholesale clients in Australia. A copy of the ASIC Class Orders may be obtained at the following website, [www.legislation.gov.au](http://www.legislation.gov.au). Financial services provided by Haitong International Securities (Singapore) Pte Ltd, Haitong International Securities Company Limited, and Haitong International Securities (UK) Limited are regulated under foreign laws and regulatory requirements, which are different from the laws applying in Australia.

**Notice to Indian investors:** The research report is distributed by Haitong Securities India Private Limited ("HSIPL"), an Indian company and a Securities and Exchange Board of India ("SEBI") registered Stock Broker, Merchant Banker and Research Analyst that, inter alia, produces and distributes research reports covering listed entities on the BSE Limited ("BSE") and the National Stock Exchange of India Limited ("NSE") (collectively referred to as "Indian Exchanges").

Name of the entity: Haitong Securities India Private Limited

SEBI Research Analyst Registration Number: INH000002590

Address : 1203A, Floor 12A, Tower 2A, One World Center

841 Senapati Bapat Marg, Elphinstone Road, Mumbai 400 013, India

CIN U74140MH2011FTC224070

Ph: +91 22 43156800 Fax: +91 22 24216327

Details of the Compliance Officer and Grievance Officer : Prasanna Chandwaskar : Ph: +91 22 43156803; Email id: [prasanna.chandwaskar@htisec.com](mailto:prasanna.chandwaskar@htisec.com)

"Please note that Registration granted by SEBI and Certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors".

This research report is intended for the recipients only and may not be reproduced or redistributed without the written consent of an authorized signatory of HTISG.

Copyright: Haitong International Securities Group Limited 2019. All rights reserved.

<http://equities.htisec.com/x/legal.html>